Corynebacterium glutamicum

Taxonomy ID: 1718
Rank: species
Genetic code: Translation table 11
Other names:

synonym: **Micrococcus glutamicus**
synonym: **Corynebacterium lilium**
synonym: **Brevibacterium divaricatum**
synonym: **Micrococcus maripuniceus**
synonym: **Brevibacterium thiogenitalis**
synonym: **Brevibacterium taipei**
synonym: **Brevibacterium seonmiso**
synonym: **Brevibacterium saccharolyticum**
synonym: **Brevibacterium glutamigenes**
synonym: **Brevibacterium chang-fua**
synonym: **'Brevibacterium lactofermentum'**
synonym: **'Corynebacterium lactofermentum'**
synonym: **Brevibacterium lactofermentum**
synonym: **Corynebacterium lactofermentum**
synonym: **Corynebacterium lilium Lee and Good 1963 (Approved Lists 1980)**
synonym: **Brevibacterium divaricatum Su and Yamada 1960 (Approved Lists 1980)**
synonym: **"Micrococcus glutamicus" Kinoshita et al. 1958**
synonym: **Corynebacterium glutamicum (Kinoshita et al. 1958) Abe et al. 1967**
synonym: **Microbacterium sp. ATCC 15283**
includes: **Brevibacterium sp. ATCC 19165**
includes: **Arthrobacter sp. NCIB 9666**

Entrez records		
Database name	Subtree links	Direct links
Nucleotide	6,968	6,950
Protein	9,971	3,872
Structure	4	4
Genome	13	12
Popset	1	1
3D Domains	21	21
PubMed Central	396	396
Gene	3,081	88
Taxonomy	2	1

Lineage (full)

cellular organisms; Bacteria; Actinobacteria; Actinobacteria (class); Actinobacteridae; Actinomycetales; Corynebacterineae; Corynebacteriaceae; Corynebacterium

Comments and References:

'Corynebacterium lactofermentum' = Corynebacterium glutamicum

Amador et al. (1999) propose the transfer of "Brevibacterium lactofermentum" to "Corynebacterium lactofermentum" on the basis of studies involving "B. lactofermentum" strains ATCC 13869 and DSM 20412. However, the ATCC catalogue of strains lists ATCC 13869 as C. glutamicum. Moreover, Liebl et al. (1991) have previously transferred "B. lactofermentum" strains DSM 20412 and DSM 1412 to C. glutamicum.

Abe S et al. (1967)

Abe, S., Takayama, K., and Kinoshita, S. "Taxonomical studies on glutamic acid-producing bacteria." J. Gen. Appl. Microbiol. (1967) 13:279-301. [No PubMed record available.]

 Amador E et al. (1999)

Amador, E., Castro, J.M., Correia, A., and Martin, J.F. "Structure and organization of the rrnD operon of 'Brevibacterium lactofermentum': analysis of the 16S rRNA gene." Microbiology (1999) 145:915-924.

Brevibacterium flavum & lactofermentum

"The Prokaryotes" (2nd edition) p. 1158 discusses the nomenclatural status of Brevibacterium flavum and Brevibacterium lactofermentum: "Their systematic classification has not been clarified but numerous data exist [citations listed below] indicating their close relatedness, if not identity, with Corynebacterium glutamicum: C. lilium, Brevibacterium flavum, B. lactofermentum, and B. divaricatum. Of the nomenclatural species B. flavum, B. lactofermentum, B. divaricatum, only B. divaricatum is included in the Approved Lists of Bacterial Names (Skerman et al., 1980), and none is a true member of the genus Brevibacterium. Therefore, data obtained with these species will be included with the discussion of the properties of Corynebacterium glutamicum." Abe et al. (1967) J. Gen. Appl. Microbiol. 13:279-301. Suzuki et al. (1981) Int. J. Syst. Bacteriol. 31:131-138. Minnikin et al. (1978) in "Coryneform bacteria" Academic Press, London.

Fukuda H (1971) (Brevibacterium thiogenitalis)

Fukuda H. "Method for producing L-glutamic acid." U.S. Pat. 3,623,951 dated Nov. 30, 1971.

 Liebl W et al. (1991)

Liebl, W., Ehrmann, M., Ludwig, W., Schleifer, K.H. "Transfer of Brevibacterium divaricatum DSM 20297T, "Brevibacterium flavum" DSM 20411, "Brevibacterium lactofermentum" DSM 20412 and DSM 1412, and Corynebacterium glutamicum and their distinction by rRNA gene restriction patterns." Int. J. Syst. Bacteriol. (1991) 41:255-260.

Oberreuter H et al. (unpublished_2001)

Oberreuter, H., Charzinski, J., and Scherer, S. "Infraspecific diversity of Brevibacterium linens, Corynebacterium glutamicum and Rhodococcus erythropolis as assessed by comparative partial 16S rDNA sequence analysis and Fourier-transform infrared (FT-IR) spectroscopy." Unpublished (as of 23 February 2001)

Okumura S et al. (1962) (Brevibacterium saccharolyticum)

Okumura, S. et al. "Studies on the L-glutamic acid fermentation. Part I. The new bacteria of the genus Brevibacterium isolated from the nature to produce L-glutamic acid." J. Agric. Chem. Soc. Jpn. (1962) 36:141-159. [No PubMed record available.]

Skerman VBD et al. (1980) (Corynebacterium glutamicum)
Skerman, V.B.D., McGowan, V., and Sneath, P.H.A. (editors): "Approved lists of bacterial names." Int. J. Syst. Bacteriol. (1980) 30:225-420. [No PubMed record available.]

Su Y & Yamada K (1960)
Su, Y., and Yamada, K.: Bull. Agric. Chem. Soc. Japan (1960) 24:69-74. [No PubMed record available.]

Zobell CE & Upham HC (1944) (Micrococcus maripuniceus)
Zobell, C.E., and Upham, H.C. "A list of marine bacteria including descriptions of sixty new species." Bull. Scripps Inst. Oceanogr. (1944) 5: 239-292. [No PubMed record available.]

External Information Resources (NCBI LinkOut)

LinkOut	Subject	LinkOut Provider
bnu	taxonomy/phylogenetic	Bacterial Nomenclature Up-to-date
R-plasmid pAG1	DNA/protein sequence	NCBI Plasmid Genomes
native 4.45 kb plasmid	DNA/protein sequence	
plasmid pAG3	DNA/protein sequence	
plasmid pAM330	DNA/protein sequence	
plasmid pCG2	DNA/protein sequence	
plasmid pGA2	DNA/protein sequence	
plasmid pTET3	DNA/protein sequence	
plasmid pXZ10142	DNA/protein sequence	
plasmid pXZ10145.1	DNA/protein sequence	

Note: Groups interested in participating in the LinkOut program should visit the LinkOut home page. A list of our current non-bibliographic LinkOut providers can be found here

Disclaimer: The NCBI taxonomy database is not an authoritative source for nomenclature or classification - please consult the relevant scientific literature for the most reliable information.

Comments and questions to info@ncbi.nlm.nih.gov
Credits: Mikhail Domrachev, Scott Federhen, Carol Hotton, Detlef Leipe, Vladimir Soussov, Richard Sternberg, Sean Turner.